

The embodiments of the invention in which an exclusive property or privilege are claimed are defined as follows:

- 1 1. A computer system for defining a set of electronic catalogs for a defined product universe,
2 each of the catalogs in the set having an associated contract, users of the electronic catalogs each
3 being associated with one of the contracts, each catalog having a unique catalog identifier and each
4 contract having a unique contract identifier, the computer system comprising
5 means for generating, storing and maintaining a graph representing the electronic catalogs,
6 each node in the graph containing data and
7 each edge in the graph connecting two nodes and being associated with one or more
8 catalog or contract identifiers,
9 means for traversing the graph in response to user requests, the traversal of the graph being
10 constrained by the catalog or contract identifiers associated with the edges in the graph, and
11 means for displaying to the user the data at reached nodes in the graph traversal.

- 1 2. The computer system of claim 1 in which the nodes comprise contract nodes, catalog nodes,
2 category nodes, product nodes and price nodes, in which
3 child nodes for contract nodes comprise catalog nodes,
4 a catalog node may have alternatively, child category nodes or child product nodes,
5 child nodes for category nodes comprise product nodes,
6 child nodes for product nodes comprise price nodes,
7 and in which each parent node has a potential plurality of child nodes.

- 1 3. The computer system of claim 2 in which each edge between a contract node and a catalog
2 node is associated with a catalog identifier, each edge between a catalog node and a category node
3 is associated with a catalog identifier, each edge between a category node and a product node is
4 associated with a catalog identifier and each edge between a product node and a price node is
5 associated with a contract identifier.

1 4. The computer system of claim 3 in which the means for traversing the graph comprises
2 means for traversing an edge in response to a user request only when either the contract identifier
3 for the contract with which a user is associated or the catalog identifier for the catalog with which
4 the user's contract is associated matches the identifier associated with that edge in the graph.

1 5. The computer system of claim 2 in which each contract node comprises associated contract
2 information and time interval attributes, each product node comprises an associated product
3 identifier attribute, and each price node comprises associated amount, currency and effective date
4 attributes.

1 6. The computer system of claim 1 in which the graph is represented by a relational database
2 table.

1 7. The computer system of claim 2 in which a catalog node may have child catalog nodes.

1 8. The computer system of claim 2 in which a category node may have child category nodes
2 and in which each edge between a category node and a category node is associated with a catalog
3 identifier.

1 9. The computer system of claims 1, 2, 3 or 4 further comprising a graphical user interface tool
2 for presenting a master catalog to a catalog author and for permitting the catalog author to filter the
3 nodes and edges in the master catalog and to define new nodes and edges to create a new catalog.

1 10. A computer program product for defining a set of electronic catalogs, the computer program
2 product comprising a computer usable medium having computer readable code means embodied in
3 said medium, and comprising computer readable program code means for implementing the
4 computer system of claims 1, 2, 3, 4, 5, 6, 7 or 8.

1 11. A method for defining and displaying a set of electronic catalogs for a defined product

2 universe, each of the catalogs in the set having an associated contract, users of the electronic catalogs
3 each being associated with one of the contracts, each catalog having a unique catalog identifier and
4 each contract having a unique contract identifier, the method comprising the following steps:
5 generating, storing and maintaining a graph representing the electronic catalogs,
6 each node in the graph containing data and
7 each edge in the graph connecting two nodes and being associated with one or more
8 catalog or contract identifiers,
9 traversing the graph in response to user requests, the traversal of the graph being constrained
10 by the catalog or contract identifiers associated with the edges in the graph, and
11 displaying to the user the data at reached nodes in the graph traversal.

12. The method of claim 11, in which the nodes comprise contract nodes, catalog nodes, category
nodes, product nodes and price nodes, in which
1 child nodes for a contract node comprise catalog nodes,
2 a catalog node may have alternatively, child category nodes or child product nodes,
3 child nodes for category nodes comprise product nodes,
4 child nodes for product nodes comprise price nodes.
5 and in which each parent node has a potential plurality of child nodes.

13. The method of claim 12, in which each edge between a contract node and a catalog node is
1 associated with a catalog identifier, each edge between a catalog node and a category node is
2 associated with a catalog identifier, each edge between a category node and a product node is
3 associated with a catalog identifier and each edge between a product node and a price node is
4 associated with a contract identifier.

14. The method of claim 13, in which the step of traversing the graph comprises the step of
1 comparing the contract identifier for the contract with which a user is associated or the catalog
2 identifier for the catalog with which the user's contract is associated and the identifier associated
3 with a reached edge in the graph and further comprises the step of traversing that reached edge only
4

5 when the comparison shows a match condition.

1 15. A computer program product for defining and displaying a set of electronic catalogs, the
2 computer program product comprising a computer usable medium having computer readable code
3 means embodied in said medium, comprising computer readable program code means for carrying
4 out the method of claims 11, 12, 13, or 14.

1 16. The computer program product of claim 15 wherein said computer readable code means
2 comprises a computer readable signal and said medium comprises a computer readable signal-
3 bearing medium.

17. The program product of claim 16 wherein said medium is a recordable data storage medium.

18. The product of claim 17 wherein said medium is a modulated carrier signal.

19. The product of claim 18 wherein said signal is a transmission over a network.

20. A computer program comprising computer program code means adapted to perform all the
steps of claims 11, 12, 13, or 14 when said program is run on a computer system.